

Dealer Setup & Adjustment Instructions

520 Series Single Stage Snowthrower



This Dealer Setup Instruction applies to the following units: _____

*These instructions may cover additional models issued after their printing.
Refer to the Dealer Setup Binder Index for complete listings.*

520 Series Snowthrowers

Mfg. No.	Description
7085663	SS5201R, 5HP Snowthrower, Manual Start
7085664	SS5201E, 5HP Snowthrower, Electric Start
1694585	5201M, 5HP Snowthrower, Manual Start
1694586	5201E, 5HP Snowthrower, Electric Start

ATTENTION SETUP PERSONNEL:



The safety warnings provided in this guide and in the operator's manual included with the unit contain important information that must be obeyed when assembling, setting-up, operating, servicing, transporting, or storing the unit.

These warnings are highlighted by the safety alert triangle symbol shown above, which signifies that an important safety message is being provided.

You must read, understand, and follow these warnings and instructions, and use safe shop and work practices at all times while working on or around this unit and all other outdoor power equipment.



Sections and items denoted by the **Setup** symbol provide the information necessary to fully assemble, test, and prepare the units described above for delivery to your customers.

A Quick Setup List is provided on page 3 of this booklet to help you identify and check that the items have been performed.

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SETUP PROCEDURES


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SAFETY RULES



Read these safety rules and follow them closely. Failure to obey these rules could result in loss of control of equipment, severe personal injury or death to you, yourself or bystanders, or damage to property or equipment. This auger is capable of amputating hands and feet and throwing objects. The triangle  in text signifies important cautions or warnings which must be followed.

General

- Read the Operator's Manual carefully. Be thoroughly familiar with all controls and proper equipment use.
- Never allow children to operate the machine. Do not allow adults to operate it without proper instruction.
- Keep the area of operation clear of all persons, particularly small children and pets.
- Never discharge material toward any person or pet.
- Make sure:
 - a. Snowthrower is in good operating condition;
 - b. All safety devices and shields are in place and working;
 - c. All adjustments are correct.

Preparation

- Never attempt to make any adjustment while engine is running.
- Thoroughly inspect the area where the snowthrower is to be used and remove all objects such as door mats, sleds, boards, wires and sticks.
- Disengage all clutches (release Auger Control lever) before starting engine.
- Do not operate snowthrower without wearing proper winter clothing. Wear footwear which improves footing on slippery surfaces. Avoid loose fitting clothing that can get caught in moving parts.
- Handle gasoline with care - it is highly flammable.
 - a. Use approved gasoline container.
 - b. Never remove the fuel tank cap or add gasoline to a running or hot engine.
 - c. Never fill the fuel tank indoors.
 - d. Wipe up spilled gasoline.
- Do not run engine indoors. Exhaust fumes are deadly.

Operation

- Keep hands and feet away from rotating parts. Keep clear of discharge opening at all times.
- Always clear snow up and down the face of slopes, never across the face. Use extreme caution when changing direction on slopes. Do not attempt to clear slopes over 17.7% (10°).
- Use extreme caution when operating on or crossing drives, walks or roads. Stay alert for hidden hazards and traffic.
- Be especially careful not to touch snowthrower parts which might be hot from operation. Allow such parts to cool before attempting to maintain, adjust or service.
- If unit starts to vibrate abnormally, disengage drives and stop the engine. Check immediately for the cause. Vibration is generally a warning of trouble.
- Never operate machine at high transport speeds on slippery surfaces. Use care when backing up.
- Before leaving operator's position for any reason:
 - shut off engine,
 - remove the Engine Key and
 - wait for all moving parts to stop.
- Before cleaning, repairing or inspecting the unit, make certain all moving parts have stopped. Remove the key to prevent accidental starting.
- Always use a grounded, 3-wire plug receptacle for electric starting.



WARNING

To avoid serious injury, do not put your hands into the auger housing or discharge chute. If auger stalls or chute becomes plugged, use the following procedure to remove objects or clear the chute:

1. Release the Auger Control.
2. Shut off the engine.
3. Remove the Engine Key.
4. Wait for moving parts to stop.
5. Use the Clean-out Tool provided with the machine. Never put your hands into the auger or discharge chute.
6. If servicing is needed, remove cover and disconnect spark plug wire.



WARNING

This unit is a "single-stage" snowthrower. The auger feeds the snow back into the housing and throws the snow out the discharge chute. If bodily contact is made with the auger or impeller when they are rotating, severe personal injury will occur.

To avoid injury, keep others and yourself away from the auger and the discharge chute whenever the engine is running. Read and follow all of the safety rules and warnings in this manual.

- Adjust snow discharge angle for safe flow when operating near glass enclosures, automobiles, window wells, dropoffs, etc.
- Do not overload machine capacity by clearing snow at too fast a ground speed.
- Disengage Auger Control when transporting or not in use.
- Never operate the snowthrower without good visibility or light. Always be sure of your footing.
- Do not change the engine governor settings or over-speed the engine.
- Never direct the discharge chute at bystanders; nor allow anyone in front of the unit while it is operational.
- Never operate this machine without all of the proper guards or other safety protective devices in place.

Maintenance & Storage

- Keep all nuts, bolts and screws tight to ensure that the equipment is in safe operating condition.
- Never store equipment with gasoline in the tank in a building where fumes may reach an open flame or spark. Allow the engine to cool before storing in any enclosure.
- Always refer to the Operator's Manual for important details if snowthrower is to be stored for an extended period.
- Run auger drive a few seconds after completion of throwing snow to help clear out snow and prevent icing and freeze-up on unit.



Quick Setup List -

Page	Setup Procedure	Steps to Perform
4	Unbox & Assemble	<input type="checkbox"/> Remove Unit From Box. <input type="checkbox"/> Install Discharge Chute <input type="checkbox"/> Assemble Handle Bars <i>(Be careful not to pinch the auger cable)</i> <input type="checkbox"/> Mount Clean-Out Tool in storage position on handle
5	Fill Gas Tank	<input type="checkbox"/> Fill Gas Tank
6	Lubricate Snowthrower	<input type="checkbox"/> Lubricate all grease & oil points
7	Test Run	<input type="checkbox"/> Check Primer <input type="checkbox"/> Check Choke <input type="checkbox"/> Check Recoil Starter <input type="checkbox"/> Check Electric Starter (Where Applicable) <input type="checkbox"/> Check Auger Control Cable <input type="checkbox"/> Check Kill Switch <input type="checkbox"/> Check Chute Rotator <input type="checkbox"/> Check Deflector



Additional information concerning functional tests, general adjustment procedures, and the location of normal lubrication points are included in these instructions.

Although all required lubrication and normal adjustments on factory-assembled components are done at the factory, this additional information is provided to assist you in ensuring that each unit is delivered to the customer in proper working order.

Setup



Unboxing & Assembly

1. Using a utility knife, open the box and remove the snowthrower.



IMPORTANT NOTE

When removing the snowthrower from the box and unfolding the handle bars **DO NOT PINCH THE AUGER CONTROL CABLE IN THE HANDLE BARS.**

2. Install the discharge chute on to the rotating ring located on the auger housing. Secure with the three 5/16 inch carriage bolts, flat washers and nylok nuts found in the parts bag (the bolt heads go to inside of the rotating ring, with washers and nuts on the outside). Refer to Figure 1.

NOTE: Install the rear bolt first for easier alignment.

3. Tighten bolts securely with a wrench.
4. Lift up folding handle to align it with lower handle and tighten the wing knobs securely as shown in Figures 2 and 3.
5. Mount clean-out tool in storage position on handle. Refer to Figure 2.

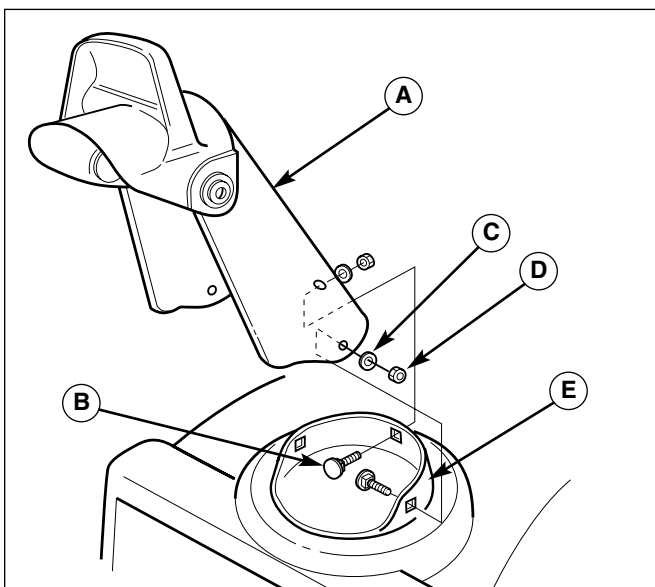


Figure 1. Assembly of Discharge Chute

- | | |
|--------------------|------------------|
| A. Discharge Chute | D. Nuts |
| B. Carriage Bolts | E. Rotating Ring |
| C. Washers | |

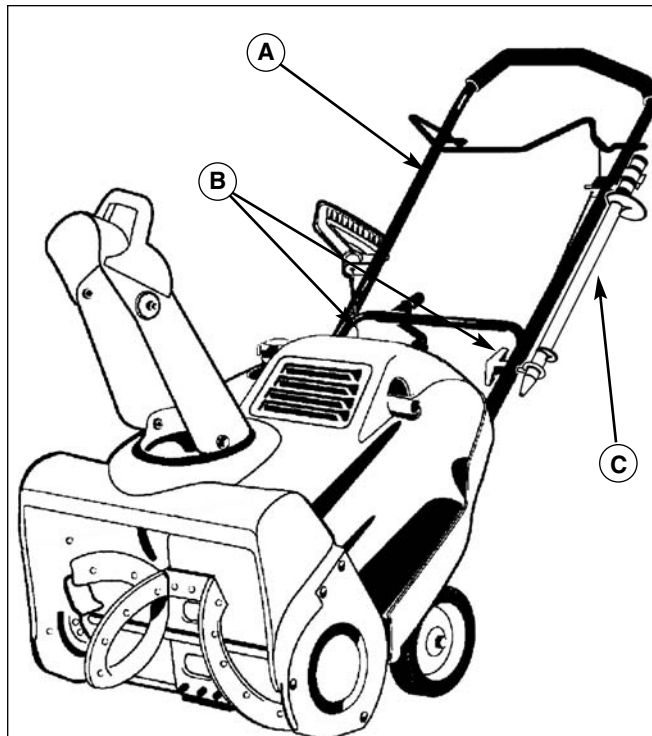


Figure 2. Handles and Clean-out Tool

- A. Handle B. Wing Knobs C. Clean-out Tool

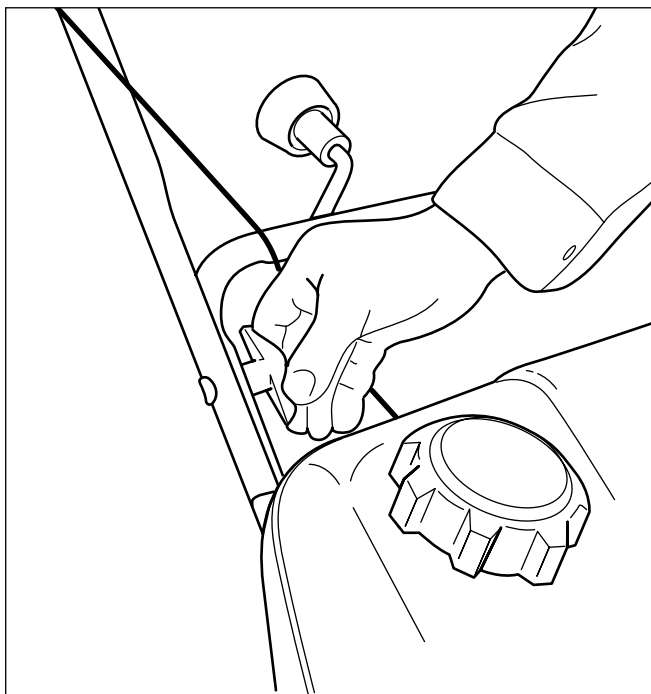


Figure 3. Lift Handles and Lock Wing Knobs

Setup



Fill Gas Tank

Fuel and Oil Mixture

The snowthrower uses a two cycle engine that requires a mixture of fuel (gasoline) and oil for lubrication of engine bearings and other moving parts.

The correct fuel/oil mixture ratio for the five horsepower engine is 50 to 1. Use fuel/oil mixture chart shown.

NOTE: To prevent damage to engine, carefully observe recommended fuel to oil mixing ratio and procedures.

- Gasoline and oil must be premixed in a clean fuel container.
- Always use fresh, unleaded, winter grade fuel
- Never put plain, unmixed fuel into fuel tank. Shake fuel container each time before filling fuel tank.
- Never use “stale” fuel left over from last season or stored for long periods.
- **DO NOT USE MULTI VISCOSITY OILS, SUCH AS 10W-30 or 10W-40.**

Proper Fuel Mixing Procedure

1. Fill approved clean fuel container one quarter full with fresh unleaded fuel - one quart (one liter) in a one gallon (4 liter) container.
2. Pour recommended amount of **high quality two cycle oil** — 2.5 ounces (80 ml) into fuel container for one gallon (4 liters) of fuel. (**NOTE: DO NOT USE MULTI VISCOSITY OILS, SUCH AS 10W-30 or 10W-40.**)
3. Reinstall cap on the fuel container and shake container vigorously so oil mixes with gasoline.
4. Unscrew cap and fill container with fuel. Shake container again.
5. Remove fuel tank cap and carefully pour mixed fuel into the fuel tank, filling to 1/2 inch (1.5 cm) below filler neck to allow room for expansion. **Never put plain, unmixed fuel into fuel tank. Shake fuel container each time before filling fuel tank.**

U.S.		Imperial		Metric	
Gasoline Gallons	2 Cycle Oil Ounces	Gasoline Gallons	2 Cycle Oil Ounces	Gasoline Liters	2 Cycle Oil Milliliters
1	2.5	1	2.8	4	80 ml
2	5	2	5.6	8	160 ml
5	13	5	14.1	20	400 ml

WARNING

Gasoline is highly flammable and must be handled with care. Never fill the tank when the engine is hot or running. Always move outdoors to fill the tank. Keep snowthrower and gasoline away from open flame or spark.

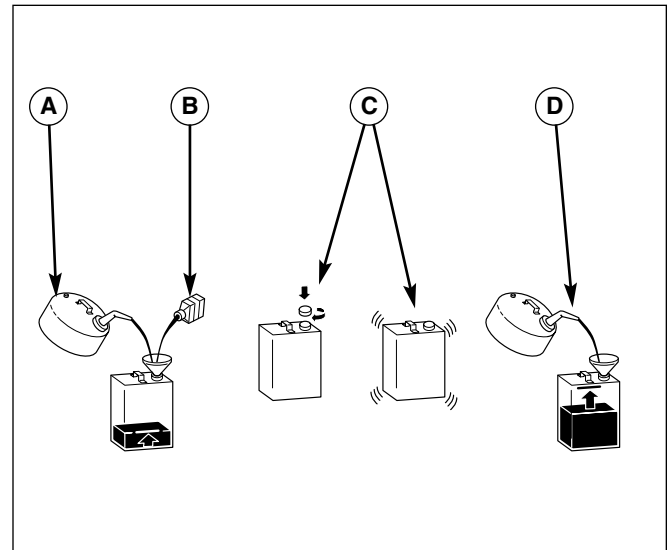


Figure 4. Proper Fuel Mixing Procedure

- A. Fill Container with 1 Quart (1 Liter) of fuel
- B. 2.5 Ounces (80 ml) of two-cycle oil
- C. Combine in container, then shake container
- D. Additional fuel brings total to 1 Gallon (4 liters)

Setup



Lubricate Snowthrower

Removing Belt Cover

In order to perform proper lubrication, it is necessary to remove the Belt cover from the lower left of the snowthrower.

1. Remove the Engine Key from the switch.
2. Remove the four screws securing the belt cover (see Figure 5).
3. Remove the cover.
4. Perform lubrication (see below).
5. Reinstall belt cover (reverse steps 3 to 1 above.)

Lubrication

Note: The drive pulley end of auger shaft is supported by a sealed ball bearing and requires no lubrication. The ball bearing on other end of auger shaft is also sealed, and will not require lubrication.

Lightly Oil

- A few drops of oil should be placed on wheel hubs occasionally to keep wheels turning freely.
- Apply oil to pivot points of auger control periodically, wiping off any excess oil.
- A couple of drops of light machine oil applied to upper end of auger control cable will assure free movement of cable through outside casing. Wipe off any excess oil (Figure 5).
- Remove belt cover and lightly apply oil to the pivot point for idler pulley arm. **BE CAREFUL NOT TO GET OIL ON BELT OR PULLEYS.**



Grease

- At the beginning of each snow throwing season, remove discharge chute, clean, and generously lubricate steel flange at back of rotating ring with light grease. Rotate ring with crank to distribute grease (Figure 8).



Engine Lubrication

The two cycle engine used in this snow thrower is lubricated by the fuel and oil mixture. Observe recommended fuel to oil mixture ratio shown on page 5.

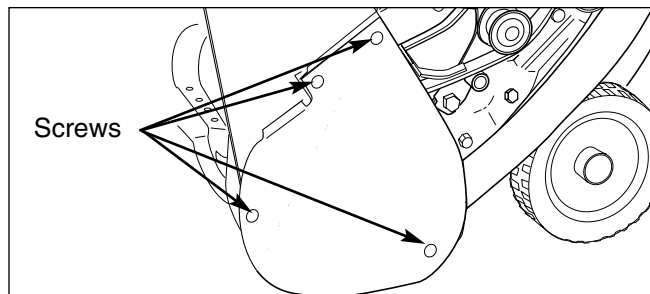


Figure 5. Removing Belt Cover

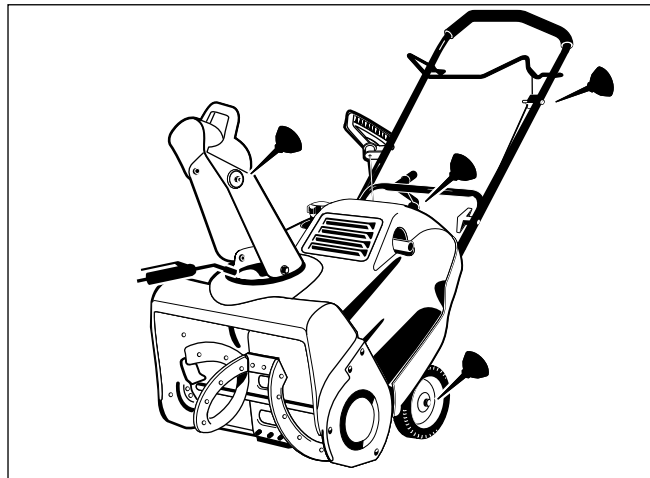


Figure 6. Lubrication points

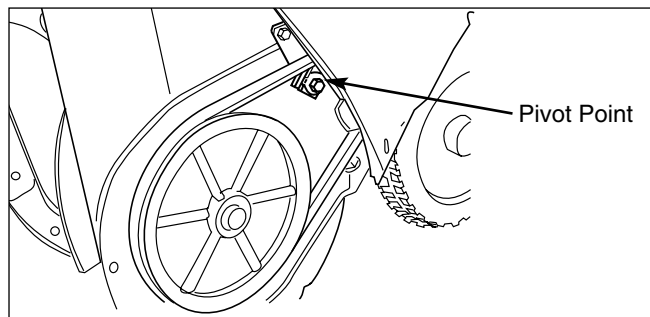


Figure 7. Lightly oil pivot point

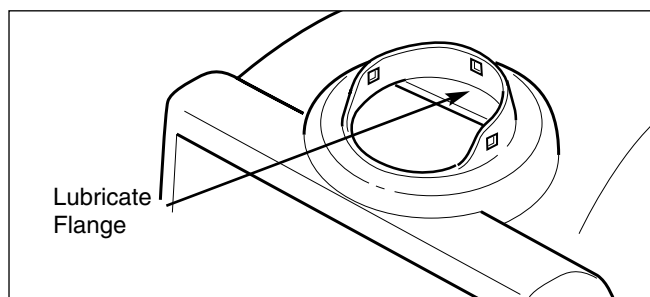


Figure 8. Grease the Discharge Chute Ring

Setup



Test Run

Test run the unit for several minutes. Check that the following work properly:

- Primer
- Choke
- Recoil Starter
- Electric Starter
(Where Applicable)
- Auger Control Cable
- Kill Switch
- Chute Rotator
- Deflector

STARTING THE ENGINE

NOTE: The snow thrower engine is designed to operate at cold temperatures. Avoid operating the snow thrower if air temperature is (40° C or warmer since engine may vapor lock and stop running after a short time. Engine will be difficult to start in warm weather.

Electric Starting Steps

Note: The electric starter is designed to operate on 120V AC household current, using power cord supplied with electric start snow thrower. When using power cord, match wide blade of plug to wide slot of receptacle.

1. Insert engine key in switch and turn key to the ON position.
2. If engine is cold, move choke control lever to the ON position. (Do not choke a warm engine).
3. Push the Primer Button two times if engine is cold. (Do not prime a warm engine.)
4. Plug power cord for starter into receptacle on starter switch, then plug other end into a 120Volt AC household receptacle. DO NOT use an extension cord with the electric start power cord supplied.
5. Push starter button to crank engine. DO NOT crank engine for more than a total of 15 seconds without allowing electric starter to cool for 10 minutes before additional cranking is attempted. Electric starter can be severely damaged if recommended starter operating limitations are not observed.

NOTE: Do not push primer button while engine is being cranked.

6. Release starter button when engine starts and gradually move choke lever to the OFF position.
7. Disconnect power cord from household receptacle and then from starter switch on snow thrower. Store cord in a dry, convenient place.

NOTE: Always disconnect power cord from household receptacle first, then unplug from starter switch.

8. To stop engine, turn Engine Key to the OFF position.

Manual (Recoil) Starting Steps

1. Insert engine key in switch and turn key to the ON position.
2. If engine is cold, move choke control lever to the ON position. (Do not choke a warm engine).
3. Push the Primer Button two times if engine is cold. (Do not prime a warm engine.)
4. Grasp starter rope handle and slowly pull out rope until resistance is felt. Allow rope to rewind slowly, then pull rope out rapidly to start engine. Let rope return slowly to starter.

NOTE: If engine does not start after three pulls, push primer bulb once and again pull starter rope.

5. After engine starts and gradually warms up, move choke lever to the OFF position. Be prepared to move choke lever to the ON position if engine falters during warm up.
6. Allow engine to warm up before beginning snow thrower operations. The engine will operate at full throttle when thoroughly warmed up.
7. To stop engine, turn Engine Key to the OFF position.

STOPPING THE ENGINE

1. Release the Auger Control.
2. Turn Engine Key to the OFF position.
3. Remove the key from the switch if you are leaving the operating position or will be making adjustments or repairs. (NOTE: Allow the unit to cool before storing or making any adjustments or repairs.)

OPERATING THE SNOWTHROWER

Before operating snowthrower, review the *Checks Before Each Use* under General Operation on page 8 of this manual.

1. Rotate the discharge chute to the desired direction.
2. Pull the Auger Control back against the handle to engage the auger and tip the unit slightly forward.
NOTE: The snow thrower will be pulled forward by the auger when the auger contacts the ground or with the snow to be thrown.
3. Begin snow removal by clearing a path down the center of walk or driveway, then gradually widen path, throwing snow off to both sides.
4. Release the Auger Control to stop both the auger and the forward motion of the snowthrower.



Removing Engine Cover

Note: In many of the following adjustment and service tasks, it will be necessary to remove and reinstall the engine cover. To remove the cover, proceed as follows:

1. Remove the Engine Key from the switch.
2. Remove the two rear fasteners securing the back of the cover housing. (Figure 9).
3. Remove the fuel tank cap.
4. Remove the cover (see Figure 10).
5. Temporarily reinstall the fuel tank cap.
6. Perform the adjustments or service desired.
7. Reinstall the cover by reversing the removal steps.

Note: The tabs at the lower front of the cover must be positioned correctly.

WARNING

To avoid the possibility of serious bodily injury when performing adjustments, maintenance or lubrication, stop engine and remove key from switch.



Carburetor Adjustment

The carburetor is properly calibrated and preset at the factory for efficient cold weather operation. There are no adjusting screws on the carburetor.

If it is apparent that the carburetor is not providing satisfactory fuel supply to engine, contact your nearest Authorized Tecumseh Service Outlet for service.



Servicing the Spark Plug

1. Remove Engine Key from switch.
2. Remove the engine cover. (See procedure above.)
3. Disconnect the wire from the spark plug.
4. Inspect the Spark Plug and clean. If necessary, replace the it with a new Spark Plug as recommended in the Engine Owners Manual.
5. Adjust the gap on the Spark Plug to .030 inches (.762 mm) using a gauge.
6. Reinstall the plug and tighten firmly.
7. Reconnect Spark Plug wire.
8. Reinstall engine cover.

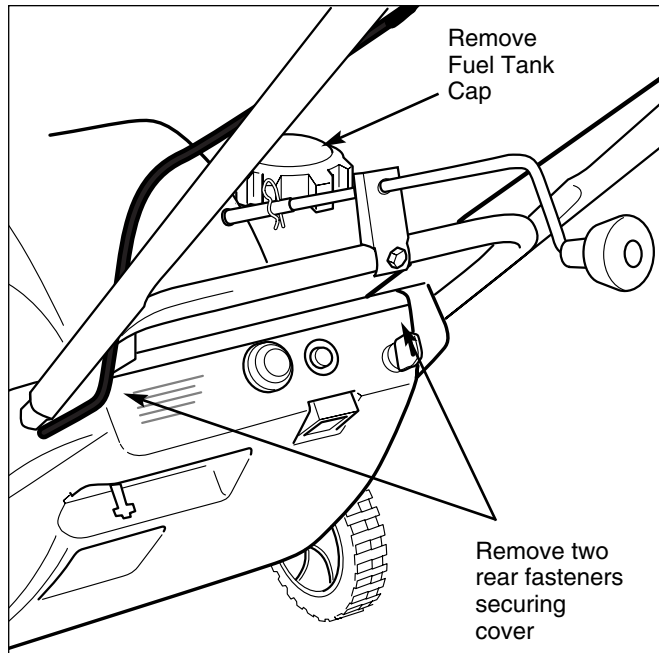


Figure 9. Remove and/or loosen Cover Screws

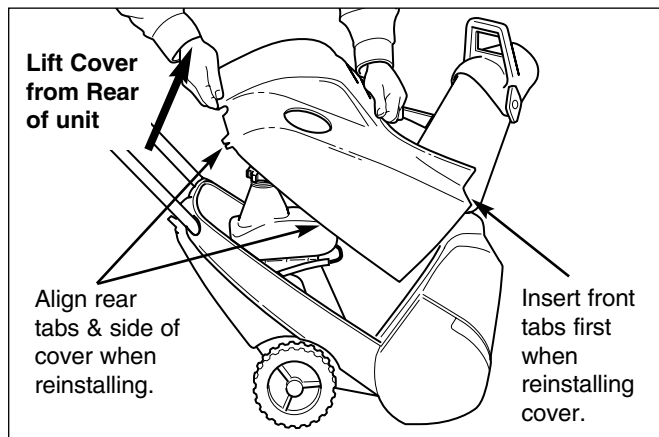


Figure 10. Cover Removal & Installation

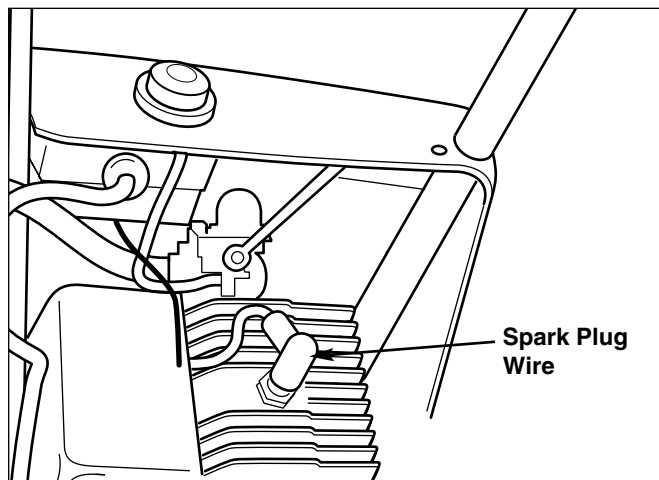


Figure 11. Servicing Spark Plug



Auger Control Cable Adjustment

The length of the auger control cable is adjustable. However, it will seldom be necessary to change the cable length since the operating tension on the drive belt is maintained by the spring on the end of the cable.

If the auger turns too slowly under heavy load or momentary squealing of drive belt is heard when entering heavy snow, pressure applied to drive belt by idler pulley must be increased by reducing the slack in the cable.

If the auger continues to turn when the auger control is released, the cable is too tight. The pressure applied to the drive belt must be eliminated by increasing the amount of slack to the cable adjustment.

Checking the Adjustment

1. Remove the Cover. (See Figures 9 & 10.)
2. Measure the spring while the auger control on the handle is disengaged. Record this measurement.
3. Pull the auger control against the handle and again measure the spring. Record this measurement.
4. Compare the two measurements. The measurement obtained with the spring extended should be 7/16 inch (11 mm) greater than with the spring unextended.

Adjusting the Cable

1. Remove the engine cover.
2. Locate and loosen the lower locknut securing the auger control cable (shown in Figure 12).
3. To **change** the slack in the cable, turn the upper locknut slightly **just until the slack between the spring and the exposed cable has been eliminated.**
4. Tighten the lower locknut.
5. Reinstall the engine cover.
6. Test the units to make certain that the cable has been adjusted properly (see "Testing the Auger Control Cable" below).

Testing the Auger Control Cable

Start the snow thrower engine and pull back on auger control to operate auger. Release auger control and check to be sure auger stops turning.

If auger continues to turn after auger control is released, the cable is too tight and will have to be adjusted to make it longer. Cable must be slightly slack when auger control is released (away from handle).

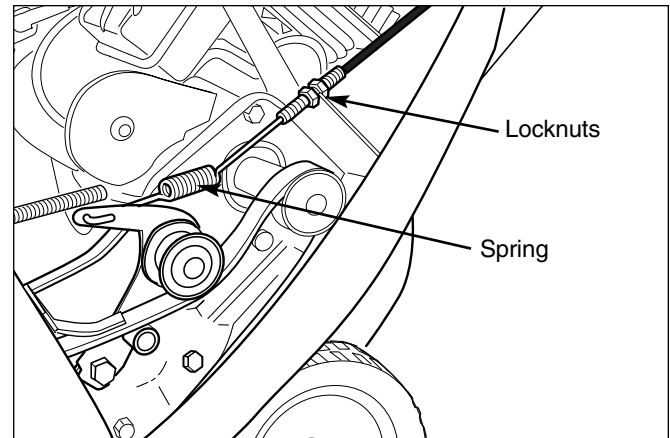


Figure 12. Auger Control Cable

WARNING

Use extreme care when making adjustments that require engine to be running. Keep hands, feet, hair and loose clothing away from any moving parts.

WARNING

Make certain the cable is NOT placing any tension on the spring. *If the cable places tension on the spring, the auger may turn when the control has not been engaged.*

Service Notes

Service Notes



Replacing the Drive Belt

1. Remove Engine Key from switch.
2. Remove belt cover (see Page 6) and the engine cover (see Page 8).
3. Move the Auger Control on the handle and slip the belt out from between the brake lever and roller and away from the idler pulley.
4. Remove the belt from the engine and auger pulleys.
5. Install new belt around engine and auger pulleys and under idler pulley. The ribbed side of the belt must be to the inside, against auger and engine pulleys.
6. Slip the new belt into place between brake lever and roller.
7. Start the engine and engage/disengage the auger control several times. Make certain that auger stops turning within 5 seconds after the control is released.
8. If the auger does not stop turning within 5 second after the control is released, adjust the tension on the control cable by following the Adjusting Control Cable procedure in the adjustments section of this manual.
9. Reinstall the belt and engine covers.

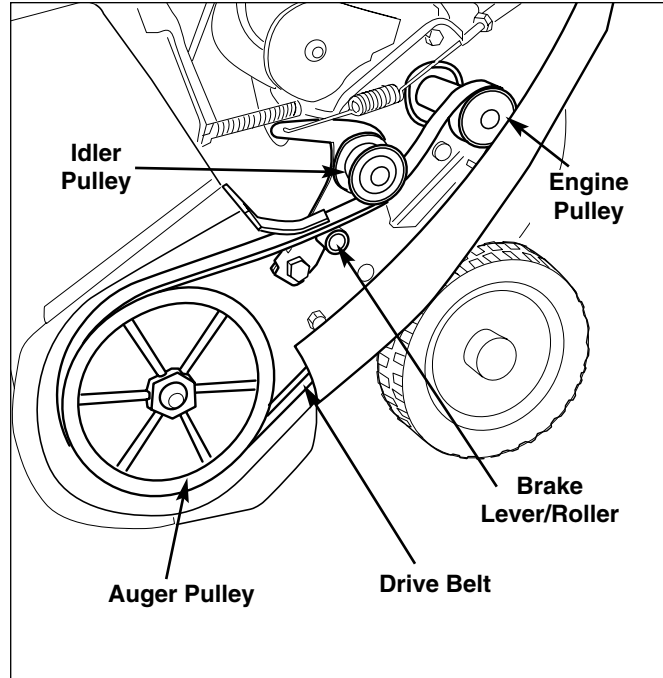


Figure 13. Drive Belt Replacement



Replacing the Scraper Blade

1. Remove Engine Key from switch.
2. Remove the two bolts and nuts securing the Scraper Blade to the auger housing. (Retain the bolts and nuts for attaching the new blade.)
3. Remove the worn Scraper Blade.
4. Install the new Scraper Blade and secure it with the three bolts and nuts saved in step 2 above.

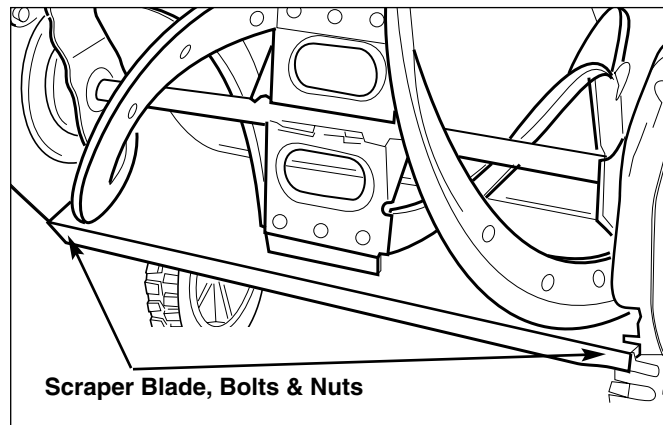


Figure 14. Removing Scraper Blade



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